CLINICAL IMAGE

Coexistence of 2 malignant urogenital neoplasms: a testicular seminoma and adenocarcinoma of the prostate gland in a patient 1 year after kidney transplantation

Małgorzata Banaszkiewicz[1], Katarzyna Krzanowska[1], Eve Chowaniec[1], Marcin Krzanowski[1], Krzysztof Okoń[2], Władysław Sułowicz[1]

1 Chair and Department of Nephrology, Jagiellonian University Medical College, Kraków, Poland
2 Department of Clinical and Experimental Pathomorphology, Jagiellonian University Medical College, Kraków, Poland

We present a case of a 65-year-old man with end-stage renal disease (ESRD) and proteinuria due to ANCA (+) vasculitis, who had received hemodialysis for 2 years. He was examined by urologists before kidney transplantation (Ktx), but no abnormalities were found. An allogenic Ktx from a deceased donor was performed in July 2014. Compliance in the HLA system was 2 antigens in DR locus. The patient was prescribed an immunosuppressive protocol: glicocorticoids–tacrolimus–mycophenolate mofetil.

In July 2015, he began to suffer from chronic diarrhea and reported a weight loss of about 5 kg. He was admitted to the hospital with creatinine levels of 249 μmol/l. Stool culture confirmed a fungal infection of the gastrointestinal tract. Treatment according to antifungal susceptibility test results was started. Diagnostic colonoscopy revealed no pathology of the large intenstine.

In October 2015, the patient was once again admitted to the hospital because of persistent diarrhea, weight loss of another 5 kg, dehydration, and weakness. Gastroscopy revealed no abnormalities. At that time, mycophenolate mofetil was converted to mycophenolic acid. Unfortunately, an ultrasound showed uncharacteristic pathological lesions in the prostate (total prostate-specific antigen [PSA] levels, 2.460 ng/ml). After examination, urologists suspected a neoplasm in the right testicle. Scrotum ultrasound revealed microcalcifications in both testes and lesions in the right testis. Before surgery, blood levels of the following parameters were assessed: free β subunit of human chorionic gonadotropin (0.32 mU/ml), α-fetoprotein (2.42 IU/ml [0.0–5.8]), lactate dehydrogenase (482 U/I [240–480]), and total PSA (2460 ng/ml [0.0–4.0]). The postoperative period was uncomplicated.

Two weeks later, right-sided orchidectomy was performed. Specimen for further assessment included neoplastic infiltration of 20 mm in diameter. A histological analysis revealed classic testicular seminoma pT2 R0 (OKT3/4$^+$, CD117$^-$, CD45$^-$, glipican 3$^-$) (FIGURES 1A, 1B, and 1C). Intratesticular location of the tumor was observed, with the presence of angioinvasion. Fibrosis and calcifications accompanied the neoplasm. The epididymis and surgical incision line were free of neoplastic infiltration. Pelvic magnetic resonance imaging showed 2 small changes (to 6–7 mm) in the prostate gland. After the diagnosis of malignancy, the immunosuppressive regimen was modified by converting mycophenolic acid to everolimus. The patient was referred for a prostate biopsy and oncological consultation. During this period, total PSA levels were 2.98 ng/ml, and free PSA levels—0.56 ng/ml. Histological analysis of prostate gland biopsy strongly suggested adenocarcinoma (Gleason 3+3=6): AMACR+, CK-HMW– (FIGURE 1D). The tumor was localized in the second left lobe of the prostate (peripheral area, at the base). After urological and oncological consultations, radiation of periaortic lymph nodes (20 Gy in 10 fractions) was performed.

Radiotherapy was used as adjuvant therapy for testicular cancer and for adenocarcinoma after

Correspondence to:
Katarzyna Krzanowska, MD, PhD, Klinika Nefrologii, Uniwersytet Jagielloński, Collegium Medicum, ul. Kopernika 15c, 31-501 Kraków, Poland, phone: +48 12 424 78 00, e-mail: kasiajanda@op.pl
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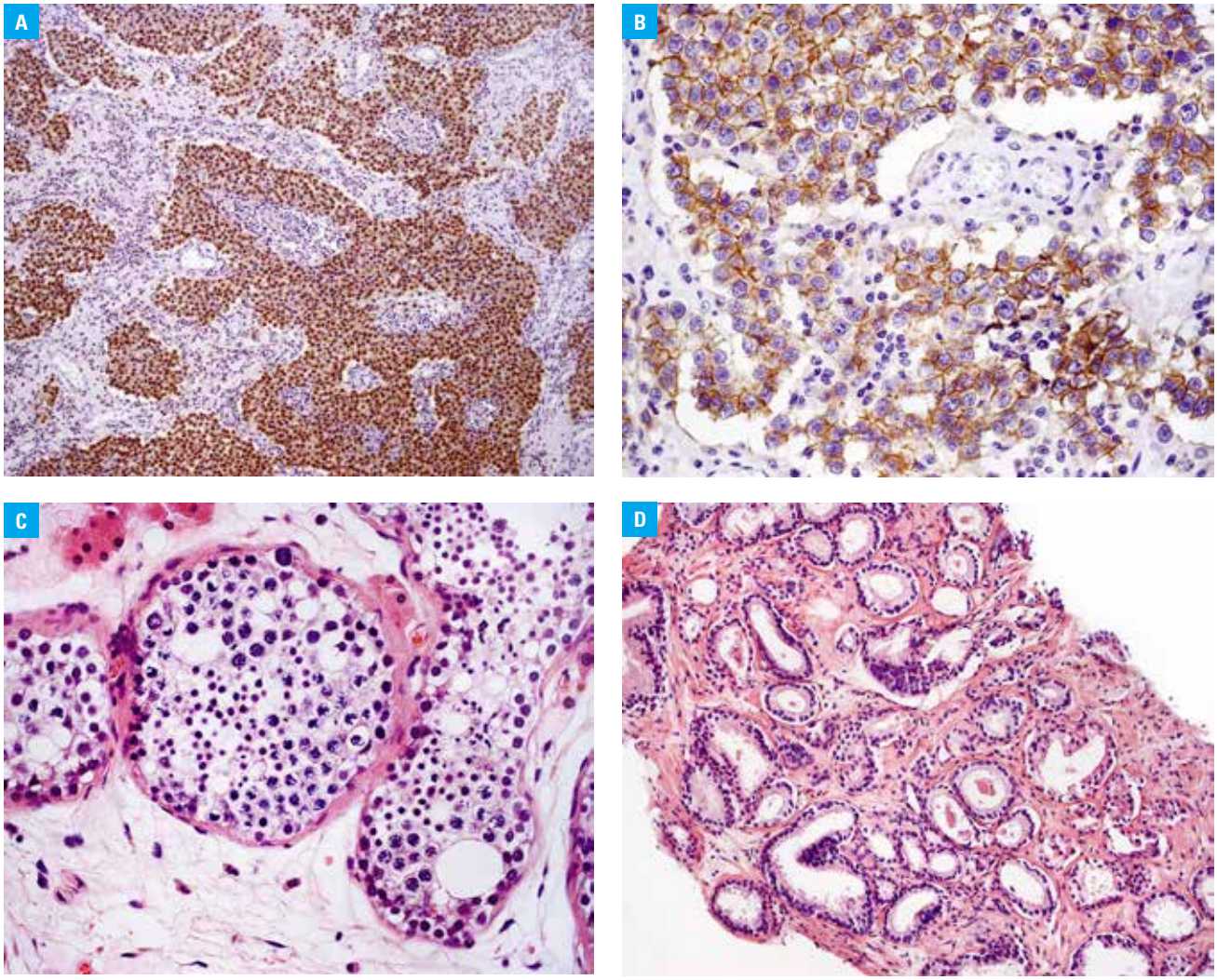

FIGURE 1 **A** – Testicular seminoma; reaction in the direction of OCT 3/4; noticeable strong nuclear reaction in all cancer cells; lack of reaction in the stroma Immunohistochemistry; 100 × magnification; **B** – testicular seminoma; reaction in the direction of CD117 (C-KIT); noticeable strong membrane reaction in all cancer cells; lack of reaction in the stroma; Immunohistochemistry, 400 × magnification; **C** – testicular seminoma; the testis outside the tumor; intratubular germ cell neoplasia; seminiferous tubule containing large cells with atypical nuclei resembling seminoma cells; group of Leydig cells in the upper part of the image; hematoxylin and eosin stain, 400 × magnification; **D** – adenocarcinoma; prostate biopsy: proliferation of small glands with rather regular nuclei, yet suspicious for carcinoma; hematoxylin and eosin stain, original 200 × magnification.

multiple oncological and urological consultations. Clinically, the patient did not present with pathology, with a 5-kg weight gain and negative results for Epstein–Barr virus and cytomegalovirus infections. Graft function after 10 cycles of irradiation was stable.

Ktx is a common therapeutic option in patients with ESRD. The growing number of Ktx is accompanied by increased prevalence of neoplasms, which are one of the most frequent reasons for mortality, next to cardiovascular diseases and infections.[1,2] Seminoma is a malignant neoplasm of the testis occurring in young men, while adenocarcinoma is the most common type of prostate neoplasm in the overall population.[3-5] The coincidence of 2 malignant neoplasms after Ktx, especially of 2 different histological types in different locations of the urogenital tract, is very rare. Our patient was diagnosed 15 months after Ktx. He was older than the majority of patients with testicular seminoma. Possible explanations include genetic abnormalities, environmental exposure, immune-related mechanisms predisposing to the second malignant neoplasm, or use of immunosuppressive drugs.

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